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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/741,631 | 12/18/2000 | Christopher Patrick | QCPA990347 | 5613 |
| 23696 | 7590 | 04/25/2006 | EXAMINER | |
| QUALCOMM, INC 5775 MOREHOUSE DR. SAN DIEGO, CA 92121 | | | WANG, TED M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2611 | |

DATE MAILED: 04/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/741,631

Applicant(s)

PATRICK, CHRISTOPHER

Examiner

Ted M. Wang

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10-15,17-21,23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,10-15,17-21,23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 02/17/2006, with respect to the rejection(s) of claims 1, 3-8, 10-15, 17-21, 23 and 24 under 35 USC § 112 first paragraph has been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lennen (US 5,493,588).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-8, 10-15, 17-21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrison et al. (US 5,752,218) in view of Lennen (US 5,493,588).

- With regard claims 1 and 8, as shown in figures 1-6, Harrison et al. discloses a method comprising:

determining a code phase of each among a plurality of received signals, wherein said received signals are GPS (column 6, line 47-column 8, line 58); and transmitting a propagation time difference of received signals (column 7,

lines 16-30, column 8, line 24-column 10, line 34 and abstract).

Harrison et al. discloses all of the subject matter as described in the above paragraph except for specifically teaching a time difference between the code phases of at least one pair among the plurality of received signals.

However, Lennen teaches a time difference between the code phases of at least one pair among the plurality of received signals (column 6 lines 20-55 and equations 5, 9, 10, 19, 20, 24, 28, 33, 37, 44, 50, 56, 61, 64, 67, 68, 71, 74 and 75).

It is desirable to determine a time difference between the code phases of at least one pair among the plurality of received signals in order to improve the code phase distance error (column 6 lines 25-31) so that the communication quality can be improved. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the method as taught by Lennen in which determine a time difference between the code phases of at least one pair among the plurality of received signals, in addition to Harrisons' propagation time difference determination method so as to improve communication quality.

- With regard claims 15, 21 and 23, which is an apparatus claim related to claim 1, as shown in figures 1-6, Harrison et al. discloses an apparatus further comprising:

- a receiver (Figure 1 element 2) configured to receive a plurality of signals;
 - a correlator (for example, Fig.1 element 8) configured to determine a code

phase for each among the plurality of received signals (column 6, lines 3-58, and column 6, line 47-column 8, line 58); and

- With regarding claims 3, 10 and 17, Harrison et al. further discloses wherein each among the plurality of received signals has a corresponding periodic code (Gold code, column 6, line 51-67), and

wherein each among the code phases relates to a predetermined position within the corresponding periodic code (column 6, line 51-58).

- With regarding claims 4, 5, 11, 12, 18 and 19, Harrison et al. further discloses wherein each among the plurality of received signals is based at least in part on a corresponding direct-sequence spread spectrum modulated signal (column 6, lines 3-13).
- With regard claims 6 and 13, Harrison et al. further discloses the method further comprising receiving a composite signal, wherein each among the plurality of received signals is based at least in part on at least a portion of the composite signal (column 6, lines 13-41).
- With regard claims 7, 14 and 20, Harrison et al. further discloses

wherein the determining a code phase of each among a plurality of received signals comprises calculating a correlation, for each among the plurality of received signals, between a corresponding code sequence and a signal based at least in part on the composite signal (column 6, lines 3-58, and column 6, line 47-column 8, line 58),

wherein each among the plurality of received signals has a corresponding

periodic code (Gold code, column 6, line 51-67), and

wherein each among the code phases relates to a corresponding
predetermined position within the corresponding periodic code, and

wherein the code sequence relates at least in part to the corresponding
periodic code (Gold code, column 6, line 51-67).

- With regard claim 24, Harrison et al. further discloses

a reference receiver (16) configured to receive signals from a plurality of
space vehicles (12) and transmit information; and

a field receiver (14) configured to receive signals from a plurality of space
vehicles (12) and to receive the information,

wherein the reference receiver determines a reference code phase for
each among at least a first and a second one of the signals, and

wherein the field receiver determines a field code phase for the first one of
the signals, and

wherein the field receiver determines a field code phase for the second
one of the signals at least in part from the information (column 8, line 65-column
10, line 34).

Harrison et al. discloses all of the subject matter as described in the above
paragraph except for specifically teaching a time difference between the code
phases of at least one pair among the plurality of received signals.

However, Lennen teaches wherein the information pertains at least to a
time difference between the reference code phase for the first and the second

one of the signals (column 6 lines 20-55 and equations 5, 9, 10, 19, 20, 24, 28, 33, 37, 44, 50, 56, 61, 64, 67, 68, 71, 74 and 75).

It is desirable that the information pertains at least to a time difference between the reference code phase for the first and the second one of the signals in order to improve the code phase distance error (column 6 lines 25-31) so that the communication quality can be improved. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the method as taught by Lennen in which the information pertains at least to a time difference between the reference code phase for the first and the second one of the signals, in addition to Harrisons' propagation time difference determination method so as to improve communication quality.


Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M. Wang


KEVIN BURD
PRIMARY EXAMINER

Ted M Wang
Examiner
Art Unit 2634